

What is magnification?

Activity 1: Make your own magnifier.

Materials needed:

1. Square clear plastic.
2. 75 mm x 50 mm cardboard
3. Scissors. 4. Tape 5. Water
6. Spoon 7. Printed page

Procedure:

1. Cut a 25 mm diameter hole in the centre of the cardboard.
2. Tape the clear plastic over the hole.
3. Fold down each end of the cardboard about 6 mm OR bridge the cardboard over two parallel pencils.
4. Using the spoon, place one drop of water on top of the clear plastic. You have now made a magnifier.
5. Place your magnifier on top of some printing.
6. Look straight down at the printing through the magnifier.
7. If the printing looks blurry, gently press down on the magnifier until the printing looks sharp.
8. Look at other objects, like a leaf or sand grain through the magnifier.



Questions:

1. How did the print look through the magnifier, compared to the print without the magnifier?

2. Do you think the magnifier has actually made the print bigger?

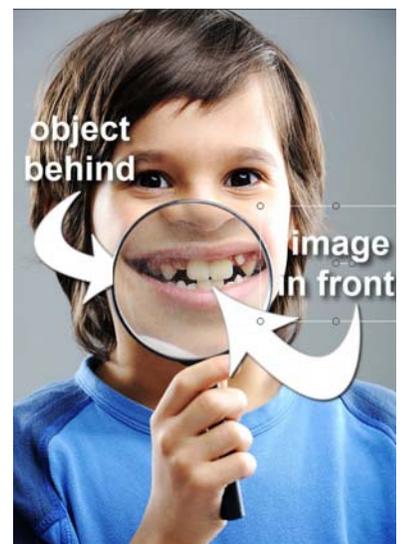
3. Choose a letter on the printed sheet and draw it *before* you look at it through the magnifier, and then *after* you look at it through the magnifier.

Activity 2: Object and Image

The boy in this photo seems to have a very big mouth. Can you explain what's going on?

The boy is holding a magnifying glass. When something looks bigger than it really is, we say that it is **magnified**. You can make your own magnifier with a glass of water, or a drop of water on plastic.

In this example, the mouth is called the **object**, and what you can see is called its **image**. The boy's real mouth has not become larger, but the *image* of his mouth has. In this case, the image looks about 3 x times larger than the object, so we can say that the magnifying power is 3.

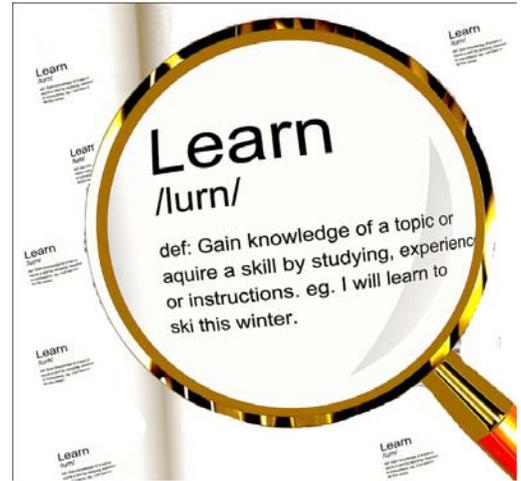


Activity 3: What is the magnifying power?

The word "Learn" is written many times on the page. However, there is only one word "Learn" inside the magnifying glass and it looks a lot bigger.

What is the object, and what is the image in this example?

Measure the length of the object and image and compare them. Can you work out what the magnifying power is?



Activity 4: LED magnifier

The 40x LED magnifier has a light that lights up the object so that you can see the image more clearly. Look at your finger tip and hand through the LED magnifier. To use this magnifier you need to place it within a few centimetres of the object, and place your eye close to the magnifier. If the image looks blurry, move the magnifier in and out slightly until it comes into focus.



Does your finger tip look *bigger* or *smaller* through the magnifier?

Does the magnifier *actually* make your finger tip grow bigger? _____

In the previous photo, the boy's skin looks smooth. Now look through the magnifier and describe how the photo boy's skin looks. Draw a picture of what you see.

Activity 5: x100 microscope

Now look at the photo of the boy through the microscope. Place the microscope flush against the photo. If the image is not clear, focus the microscope using the dial on the side.

Describe what you see.

How is the image of the skin different to the one in Activity 4?

Draw what you see.

